

ORIGINAL RESEARCH ARTICLE

Impact of depression, functional status, and self-care level on quality of life in patients with multiple sclerosis

Supplementary Files

1. Sample size and power considerations

The sample size (*n*) for this study was calculated based on a finite population (*N*) of 349 patients with multiple sclerosis (MS) in the study setting. Using a 95 % confidence level (*Z* = 1.96), a 5 % margin of error (*e* = 0.05), and a conservative estimated prevalence of 50 % (*p*=0.5), the required sample size was determined using Equation SI for finite populations to ensure sufficient statistical power to detect meaningful differences or associations within the study population.

$$n = \frac{N \times Z^2 \times p \times (1 - p)}{e^2 \times (N - 1) + Z^2 \times p \times (1 - p)} \tag{SI}$$

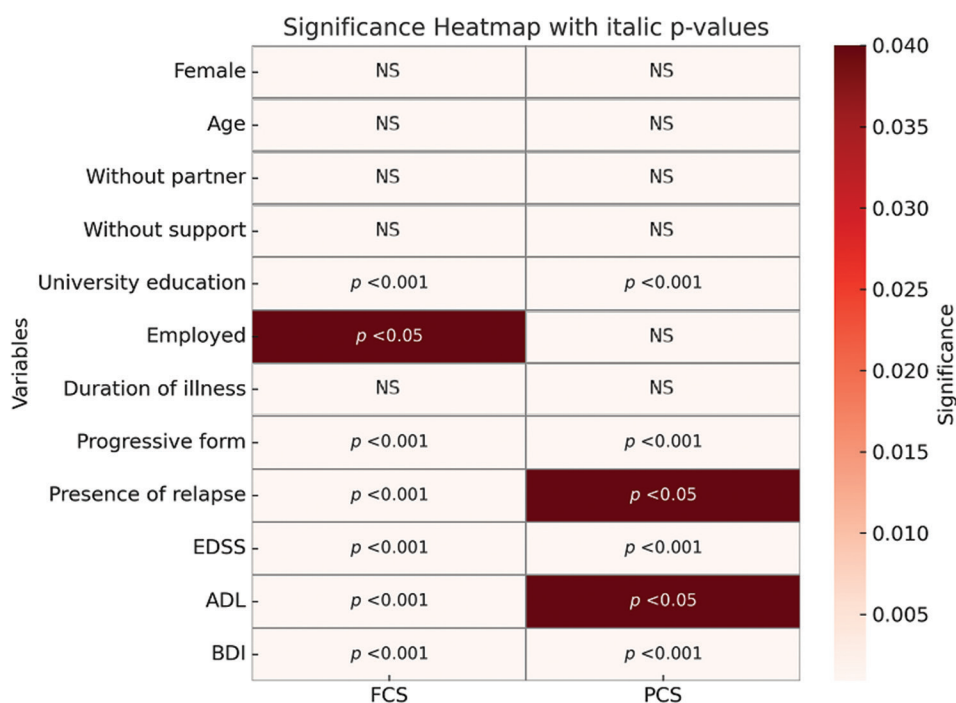


Figure S1. Multiple regression results of model 3

Abbreviations: ADL: Activity Daily Living; BDI: Beck Depression Inventory; CI: Confidence interval; EDSS: Expanded Disability Status Scale; FCS: Physical composite score; NS: Not significant; PCS: Psychological composite score

Table S1. Results of multiple regression on quality of life determinants

Variables	FCS			PCS		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Female	0.567	0.738	0.440	0.095	0.098	0.357
Age	0.001***	0.002**	0.238	0.806	0.885	0.740
Without partner	0.036*	0.047*	0.773	0.021*	0.093	0.674
Without support	0.728	0.425	0.423	0.026*	0.365	0.523
University education	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
Employed	0.000***	0.0023**	0.0138*	0.206	0.158	0.169
Duration of illness		0.095	0.672		0.441	0.112
Progressive form			0.000***			0.000***
Presence of relapse			0.000***			0.025*
EDSS			0.000***			0.000***
ADL			0.000***			0.031*
BDI			0.000***			0.000***
Intersection	0.000***	0.003**	0.000***	0.001***	0.001***	0.000***
Constant	46.31	43.75	52.73	52.74	43.92	48.53
Population size (N)	349	349	349	349	349	349
F statistic	15.860	12.860	16.370	7.091	5.780	5.470
R	0.485	0.488	0.574	0.346	0.351	0.376
R ²	0.235	0.238	0.330	0.121	0.123	0.141

Notes: Results of Spearman correlations, * $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$.

Abbreviations: ADL: Activity Daily Living; BDI: Beck Depression Inventory; EDSS: Expanded Disability Status Scale; FCS: Physical composite score; PCS: Psychological composite score.

Table S2. Key findings of the correlations between determinants of quality of life

Association	β coefficient	95% CI	p-value
FCS versus PCS	0.850	0.810, 0.890	<0.001
BDI versus FCS	-0.533	-0.600, -0.460	<0.001
BDI versus PCS	-0.650	-0.710, -0.590	<0.001
EDSS versus FCS	-0.540	-0.610, -0.470	<0.001
EDSS versus PCS	-0.688	-0.740, -0.630	<0.001
ADL versus FCS	0.778	0.730, 0.820	<0.001
ADL versus EDSS	0.496	0.430, 0.560	<0.001
Age versus FCS	-0.360	-0.440, -0.280	0.008
Age versus EDSS	0.456	0.390, 0.520	<0.001
Education versus FCS	0.278	0.210, 0.340	<0.001
Education versus PCS	0.149	0.080, 0.220	0.042
Duration versus EDSS	0.486	0.420, 0.550	<0.001
Duration versus ADL	0.566	0.500, 0.630	<0.001

Abbreviations: ADL: Activity Daily Living; BDI: Beck Depression Inventory; CI: Confidence interval; EDSS: Expanded Disability Status Scale; FCS: Physical composite score; PCS: Psychological composite score.